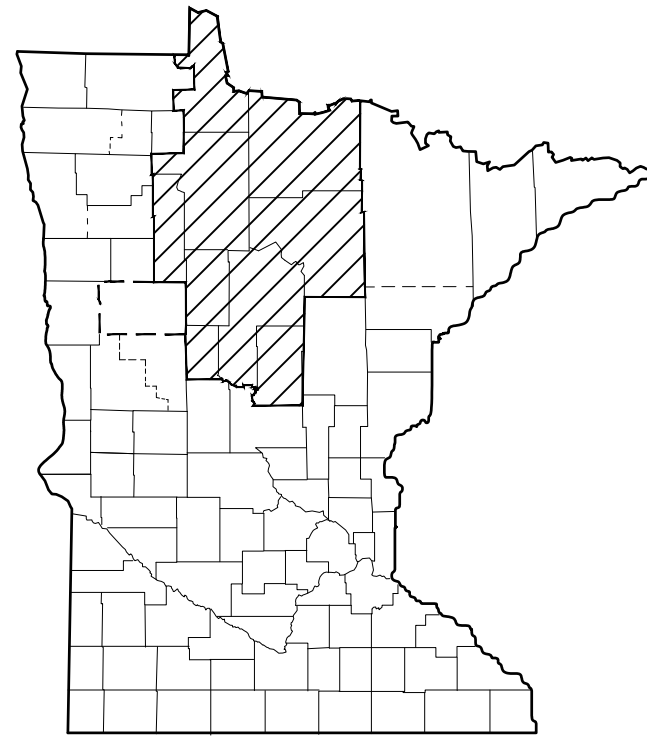
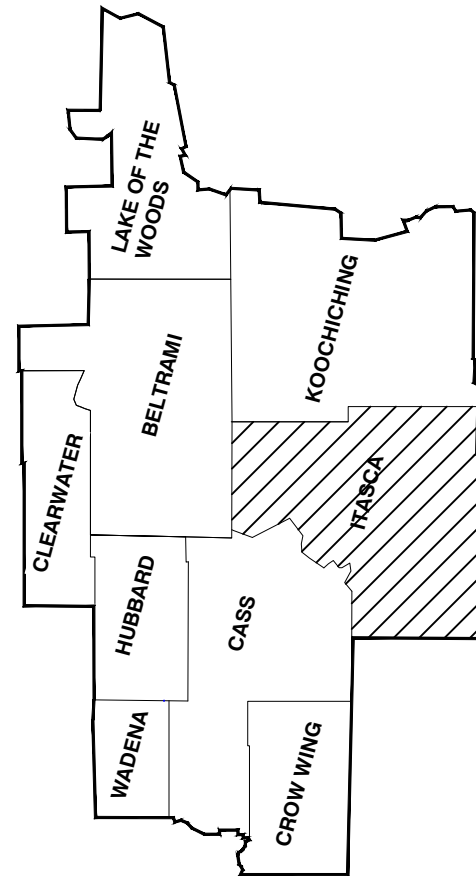


KINGS LAKE WATER CONTROL STRUCTURE



Project Location:
25699 Co Rd 338
Bovey, MN 55709

**TOWNSHIP 58 NORTH
RANGE 24 WEST
SECTION 4**



⚠ Revised: October 10, 2019

BEFORE START OF CONSTRUCTION, THE OWNERS OF ANY UTILITIES INVOLVED MUST BE NOTIFIED. THE EXCAVATOR IS RESPONSIBLE FOR GIVING THIS NOTICE BY CALLING "GOPHER STATE ONE-CALL" AT (612) 454-0002 (TWIN CITIES METRO AREA) OR (800) 252-1166 (ALL OTHER LOCATIONS) AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION.

THE OWNER IS RESPONSIBLE FOR OBTAINING LAND RIGHTS AND ALL PERMITS OR OTHER PERMISSION NECESSARY TO PERFORM AND MAINTAIN THE PROJECT.

-- GOVERNING SPECIFICATIONS --

THE CONSTRUCTION AND MATERIALS SPECIFICATIONS PREPARED FOR THIS PROJECT SHALL GOVERN. THESE SPECIFICATIONS ARE PART OF THE PLAN.

CHANGES IN THE DRAWINGS OR SPECIFICATIONS MUST BE AUTHORIZED BY THE OWNER AND THE RESPONSIBLE ENGINEER.

SHEET INDEX	
SHEET NO.	TITLE
1	LOCATION MAP
2	QUANTITIES
3	TYPICALS
4	DETAIL
5	PLANVIEW

LOCATION MAP



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NOT TO SCALE



Technical Service Area 8
322 Laurel St, Suite 22
Brainerd, MN 56401
(218) 828-6197

Kings Lake

Drawn By: Dylan Nistler
Checked By: William Westerberg

Location Map

I hereby certify that this plan, specification, or report, was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

William K. Westerberg
License #: 21874
Date: _____

Sheet No.
1 of 5



Technical Service Area 8
 322 Laurel St, Suite 22
 Brainerd, MN 56401
 (218) 828-6197

Kings Lake

DATE

Drawn By: Dylan Nistler

Checked By: William Westerberg

Quantities

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William K. Westerberg

License #: 21874

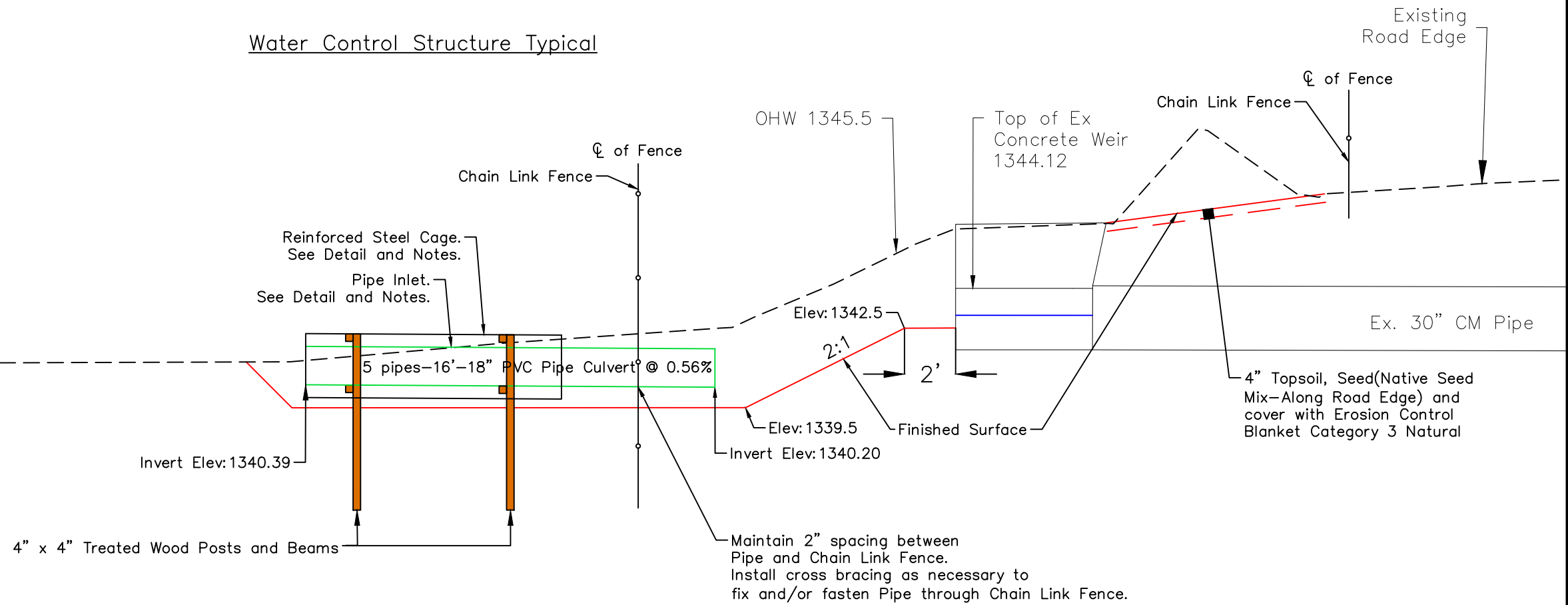
Date: _____

ESTIMATED QUANTITIES

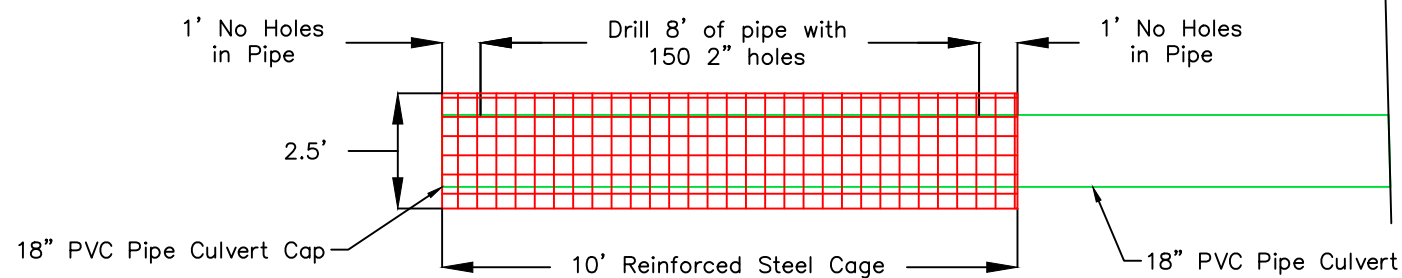
ITEM NO.	ITEM	UNIT	QUANTITY
2021	Mobilization	Lump Sum	1
2105	Common Excavation	Cu. Yd.	70
2472	Reinforced Steel Cage – Reinforcement Bar	Sq. Ft.	415
2557	Reinforced Steel Cage – Chain Link Fence	Sq. Ft.	415
2501	18” PVC Pipe Culvert	Lin. Ft.	80
2501	18” PVC Pipe Culvert Cap	Each	5
2511	Random Rip Rap Class II/Boulder Void Filler	Cu. Yd.	0
2557	Chain Link Fence	Lin. Ft.	120
2557	Chain Link Fence– Pedestrian Gate	Each	1
2573	Erosion Control Blanket Category 3 Natural	Sq. Yd.	47
2573	Erosion Control Blanket Category 7 Natural	Sq. Yd.	0
2573	Flotation Silt Curtain– Type Light Duty	Lin. Ft.	125
2575	Seeding	Sq. Ft.	700
2575	Native Seed Mix – Along Road Edge	Pound	0.5
2575	Native Seed Mix – Top of Berm	Pound	0
2575	Native Plants	Each	0
	Bio D Block	Lin. Ft.	30
	30” Rat Guard	Each	1

1 Revised: October 10, 2019

Water Control Structure Typical



Pipe Inlet Detail



Notes:

- Pipe and reinforced steel cage shall be held in place with 4"x 4" treated wood posts driven into lake bottom. Connect 4"x 4" treated wood beams to posts with appropriately sized galvanized bolts, washers and nuts.
- Treated wood shall be in accordance with material specification 584 Structural Timber and Lumber and 585 wood preservatives and Treatment
- Reinforced Steel Cage shall be:
 - 10' long and 2.5' Diameter
 - Cage shall be No. 4 Reinforcement Bar in accordance with MNDOT Spec 2472 and 3301
 - Weld reinforcement bar to create 6"x6" spaces between bars
 - Cover reinforced steel cage with chain link fence mesh(2" max opening) and attach. See MNDOT Spec 2557 for additional information.

Notes:

- See MNDOT Std Plate 9322 in the specifications for additional information on Chain Link Fence and Pedestrian Gate.
- Contractor shall furnish recommendations, shop drawings, for materials and installation procedure for Chain Link Fence to Engineer for review and approval before construction begins. Do not want beaver to get inside fenced area. The recommendations or shop drawings shall include but not limited to:
 - Length of posts below the lake bottom
 - Diameter of posts
 - Bracing required
 - Top pipe requirements
 - How will Chain link fabric be embedded in lake bottom
 - Connection of chain link fabric to posts and pipe
 - Installation of pipe culverts through Chain Link Fence.
 - Support of pipe culverts through fence maintaining maximum 2" separation between Chain Link Fabric and pipe culverts. Pipe shall support chain link fabric.
- Flotation Silt Curtain shall be type light duty in accordance with MNDOT Spec 3887 and installed in accordance with MNDOT Spec 2573.

▲ Revised: October 10, 2019



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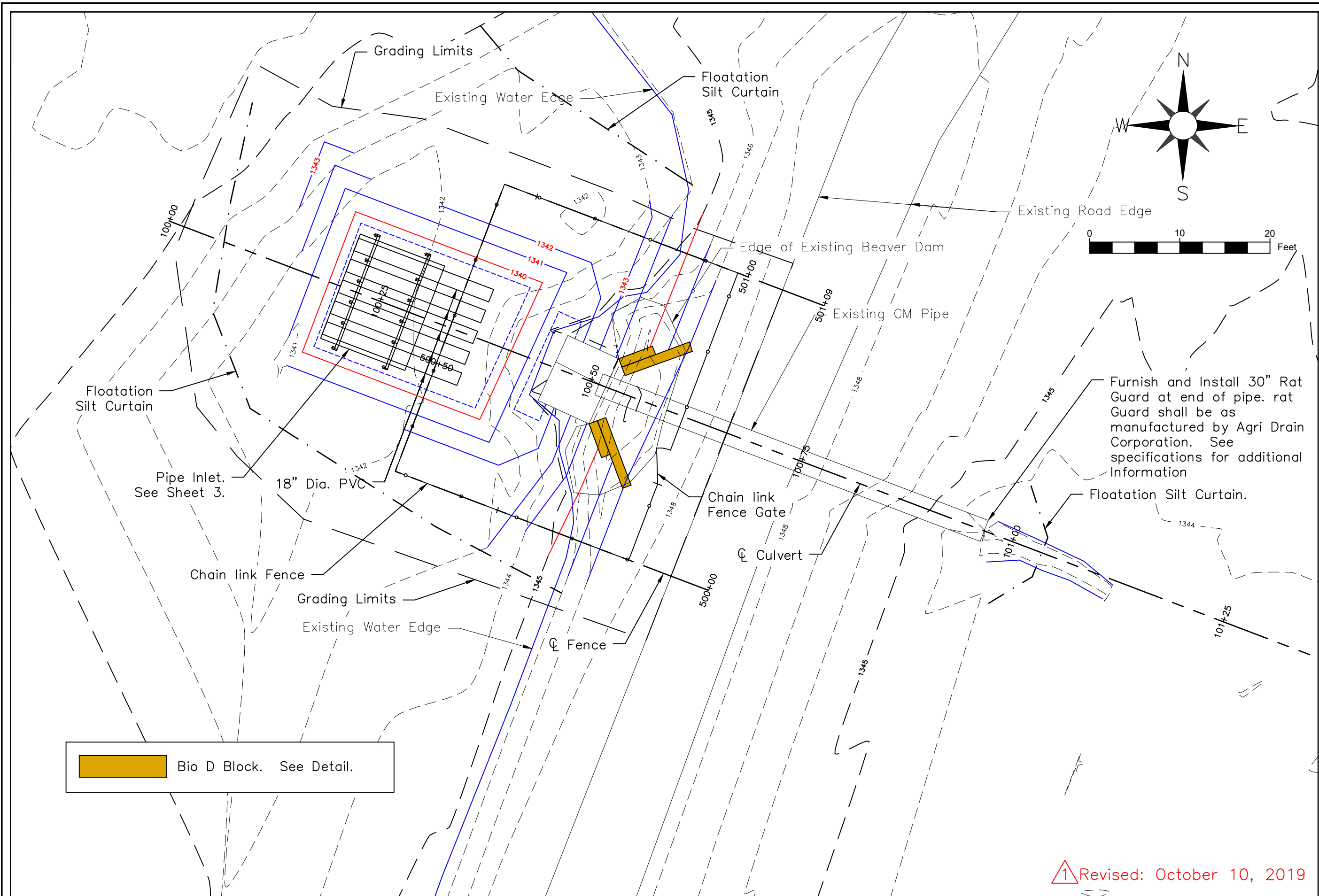
Kings Lake

Drawn By: Dylan Nistler	DATE
Checked By: William Westerberg	

Typical & Details

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William K. Westerberg
 License #: 21874
 Date: _____



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 Brainerd, MN 56401
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Kings Lake
 Drawn By: Dylan Nistler
 Checked By: William Westerberg
 DATE _____
 Plan View

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Sheet No.
 5 of 5

1 Revised: October 10, 2019